

incident angle  $i$  should be  $10^\circ$  or greater. In general, the angle  $i$  should be in the range of  $5 - 30^\circ$ , with a more preferred range of  $10-20^\circ$ . For removal of redeposition material from the sidewalls of the P2 pole tip structure, the incident angle  $i$  of the  $C_2F_6/Ar$  beam is chosen to be in the range of  $65-80^\circ$ , with a preferred range of  $70-75^\circ$ . Because of the good etching selectivity of  $Al_2O_3$  over NiFe, this P2 pole tip sidewall cleaning step will not alter the P2 pole tip track width even if an aggressive overetch is applied.

### In the Drawing

Please amend Figs 1-4 as shown in red on the attached page of amended drawings.

### In the Claims

Please delete claims 1-7 and 12 without prejudice.

Please amend the claims by replacing the pending like numbered claims with the clean claims set forth below. A marked up version of these claims is provided in Attachment B.

- 1 ~~1~~ 8. (Once amended) A method for fabricating a magnetic head, including the steps of:
- 2 fabricating a P1 pole, a write gap layer and a P2 pole tip;
- 3 notching said P1 pole using two ion beam etching steps including:
- 4 etching portions of said write gap layer utilizing a write gap etchant ion beam that is
- 5 formed from an etchant gas including  $C_2F_6$  and argon, wherein said etching of said write gap
- 6 layer is conducted in part with a first write gap etchant ion beam angle away from normal of
- 7 from  $5^\circ$  to  $30^\circ$ , and in part with a second write gap etchant ion beam angle away from normal of
- 8 from  $65^\circ$  to  $85^\circ$ ;
- 9 subsequently etching portions of said P1 pole using a P1 pole etchant ion beam that is
- 10 formed using argon as an etchant gas, wherein said etching of said P1 pole is conducted in part

- 11 with a first P1 pole etchant ion beam angle away from normal of from 30° to 45°, and in part  
12 with a second P1 pole etchant ion beam angle away from normal of from 65° to 85°.
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1 ~~6~~ 13. (Once amended) A method for fabricating a magnetic head as described in claim ~~8~~  
2 wherein said first write gap etchant ion beam angle is from 10° to 20° and said second write gap  
3 etchant ion beam angle is from 70° to 75°.

1 ~~7~~ 14. (Once amended) A method for fabricating a magnetic head as described in claim ~~13~~  
2 wherein said first write gap etchant ion beam angle is approximately 10°.

1 ~~8~~ 15. (Once amended) A method for fabricating a magnetic head as described in claim ~~13~~  
2 wherein said C<sub>2</sub>F<sub>6</sub>/Ar ion beam is generated with an ion beam voltage of from 600-900 volts,  
3 and an ion beam current of from 600-1200 mA.

1 ~~9~~ 16. (Once amended) A method for fabricating a magnetic head as described in claim ~~13~~  
2 wherein said C<sub>2</sub>F<sub>6</sub>/Ar ion beam voltage is in the range of 650-750 volts and said ion beam  
3 current is in the range of 900-1100 mA.

1 ~~10~~ 17. (Once amended) A method for fabricating a magnetic head as described in claim ~~16~~  
2 wherein a Ni fluoride thin film layer is formed on said P2 pole tip.

1 ~~11~~ 18. (Once amended) A method for fabricating a magnetic head, including the steps of:  
2 fabricating a P1 pole, a write gap layer and a P2 pole tip;  
3 notching said P1 pole in a process consisting essentially of the following two etching  
4 steps:

5 etching portions of said write gap layer utilizing a write gap etchant ion beam that is  
6 formed from an etchant gas including  $C_2F_6$  and argon, wherein said  $C_2F_6$  gas concentration range  
7 is from 70% to 80%; and wherein said etching of said write gap layer is conducted in part with a  
8 first write gap etchant ion beam angle away from normal of from  $10^\circ$  to  $20^\circ$ , and in part with a  
9 second write gap etchant ion beam angle away from normal of from  $70^\circ$  to  $75^\circ$ ;  
10 subsequently etching portions of said P1 pole using a P1 pole etchant ion beam that is  
11 formed from argon as an etchant gas, wherein said etching of said P1 pole is conducted in part  
12 with a first P1 pole etchant ion beam angle away from normal of from  $30^\circ$  to  $45^\circ$ , and in part  
13 with a second P1 pole etchant ion beam angle away from normal of from  $65^\circ$  to  $85^\circ$ .

Please and insert the following new claims:

Q4  
1 ~~10~~<sup>10</sup> (New) A method for fabricating a magnetic head as described in claim ~~11~~<sup>4</sup>, wherein said  
2 first write gap etchant ion beam angle is approximately  $10^\circ$  away from normal, and said first P1  
3 pole etchant ion beam angle is approximately  $30^\circ$  away from normal.

Q5  
1 ~~12~~<sup>12</sup> (New) A method for fabricating a magnetic head as described in claim ~~13~~<sup>11</sup>, wherein said  
2  $C_2F_6$ /Ar ion beam voltage is in the range of 650-750 volts and said ion beam current is in the  
3 range of 900-1100 mA.

1 ~~13~~<sup>13</sup> (New) A method for fabricating a magnetic head as described in claim ~~20~~<sup>12</sup>, wherein said  
2 first write gap etchant ion beam angle is approximately  $10^\circ$  away from normal, and said first P1  
3 pole etchant ion beam angle is approximately  $30^\circ$  away from normal.